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ABSTRACT

The results of an interim evaluation of the Prefreshman Summer Basic Skills Program at the City University of New York are presented. The program provided instruction to prefreshmen needing remediation in one or more of the basic skills of reading, writing, and mathematics. In an effort the provide effective remedial instruction and to facilitate students' transition to college, the program featured small-group instruction, peer tutoring, and counseling. Results include the following: prefreshman basic skills instruction delivered over the summer is effective; retention rates showed more than 90% of the 1,414 participants completed the program and subsequently enrolled as freshmen; 46% of English-as-a-Second-Language (ESL) students progressed in reading and 61% in writing; and students began their freshman year with a sense of familiarity and firsthand knowledge of the college and its services. Six recommendations include: develop ESL instructional components; use instruction in computer skills and study strategies to augment basic skills instruction; and pay more attention to support services available over the summer. Contains 4 references. (SM)

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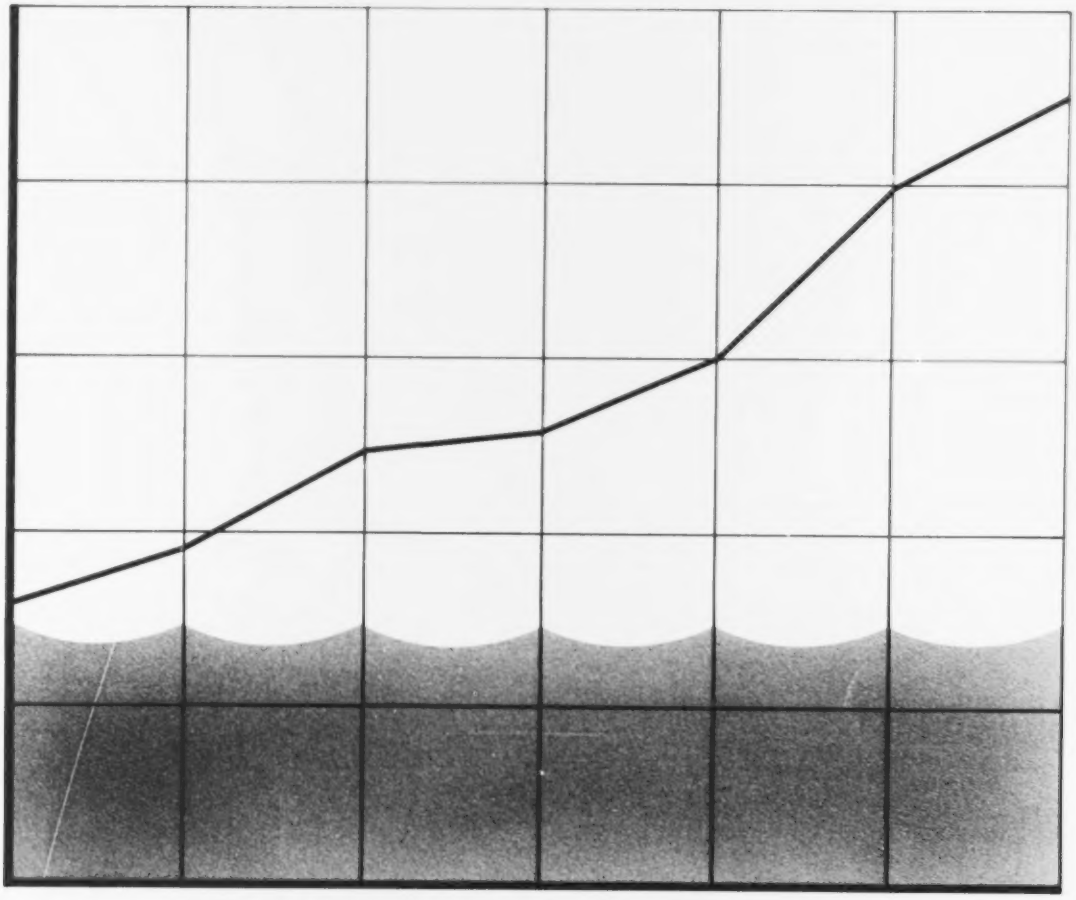
1986 PREFRESHMAN SUMMER PROGRAM:

An Interim Evaluation



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1986 PREFRESHMAN SUMMER PROGRAM

An Interim Report

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SUMMARY

The purpose of this report is to share the results of an interim evaluation of the Prefreshman Summer Basic Skills Program. The program provided instruction to prefreshmen needing remediation in one or more of the basic skills of reading, writing and mathematics. In an effort to provide effective remedial instruction and to facilitate students' transition to college, the program featured small-group instruction, peer tutoring and counseling. Program results are highlighted below.

Retention

- Program completion rates were impressive. More than 90% of the 1,414 participants completed the program and subsequently enrolled as freshmen.
- After one year in college, summer program participants outperformed nonparticipants in both credits earned and reenrollment rates.

Student Success

- Student achievement was outstanding. At the senior colleges 70% of the participants demonstrated marked progress in reading, 60% improved in writing, and 77% progressed in mathematics. At the community colleges 49% progressed in reading, 62% in writing, and 59% in mathematics.
- The program proved effective for ESL students as well. Overall, 46% progressed in reading and 61% advanced in writing.
- Most students completed remediation prior to their freshman year, increasing the likelihood of continuing academic success.

Freshman Year Experience

- Students began their freshman year with a sense of familiarity and first-hand knowledge of the college and its services.
- Students told of relationships with faculty and staff that continued over subsequent semesters, creating a resource of mentors and advisors.
- Many students acquired computer skills and study strategies that enabled them to better manage the demands of college.

FOREWORD

As Summer 1987 approaches, the University is again preparing to foster summer learning through the Prefreshman Summer Basic Skills Program. This program combines intensive instruction in reading, writing and mathematics with a comprehensive orientation to college. The results after two years of operation reinforce our belief in the positive effects of intensive remediation when delivered over the summer, particularly for highly motivated, yet academically underprepared entering freshmen.

We know, for example, that early completion of remedial work encourages students to persist in college. We know that the individual attention provided by instructors, counselors, and tutors is crucial to the academic success of students with remedial needs. More importantly, we have learned that basic skills instruction can be particularly effective when delivered intensively over the summer. The report presented in the following pages summarizes what the program is, who participated, and how effective it was in meeting its goals. Judging from the preliminary results reported herein, the impact of the Prefreshman Program holds the promise of contributing significantly to the University's goal of enhancing student success.

This report would not have been possible without the help of many people. Special thanks are due to all campus-based program staff and faculty. Their ability to supply the authors with timely and accurate information and student data represents a major contribution to this work. In addition, the authors would like to thank the following individuals for their help and support: Barbara Gonzales, Acting University Associate Dean for Freshman Skills Assessment, for administrative support of the Prefreshman Summer Basic Skills Program; Barry Kwalick, Assistant to the Dean for Freshman Skills, for management of the data collection and program coordination; Merlin Fahey for clerical assistance; Francine Cagino and Milagros Cuevas for data entry; and the staff of the Office of Institutional Research for help with the creation of a longitudinal cohort of program participants.

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INTRODUCTION

A primary goal of the Prefreshman Program is to improve students' basic skills before they enter college. This goal acknowledges the mounting evidence, both nationally and within City University, of a strong, positive correlation between early completion of remediation and persistence in college. An equally important goal is to facilitate students' transition from high school to college by orienting them to college life and the campus during the less stressful summer months. Needless to say, a program of such potential for enhancing student success deserves careful evaluation. The purpose of this report is to share with City University of New York faculty and staff the results of an interim evaluation of the program. In particular, our intent is to provide evaluative feedback to those faculty and staff involved in the design and implementation of this University initiative. More detailed, longitudinal analyses of student performance and achievement are continuing, however, and a year-end report detailing long-term program outcomes is planned for publication in the Fall of 1987.

This preliminary evaluation focuses on outcomes in four areas: student characteristics, academic achievement, adjustment to college, and post-program achievement and retention. The following report describes the program's background, the students who participated, the evaluative methods employed, and our findings and conclusions. Where appropriate, the data on community and senior college programs are presented and discussed separately.

Background

In Summer 1985, City University introduced a basic skills program for prefreshmen (that is, students intending to enroll as first-time freshmen in the Fall of 1985). The goals of the program were modest and included improving basic skills, fostering early completion of remedial requirements, and facilitating the transition from high school to college. Modeled after the highly successful SEEK Prefreshman Program (see Bengis, 1985), this summer session was offered tuition free, fostered small-group instruction and provided intensive tutoring, as well as early academic advisement. In addition, stipends were provided to students to defray the costs of books, lunch and carfare.

Throughout Summer 1985, pilot programs were begun at the senior colleges. More than 500 students participated. For the most part, instruction was offered over a six-week period and included instruction in the basic skills of reading, writing, mathematics and English as a second language. Although program duration varied slightly from college to college, most scheduled their 1986 program to facilitate enrollment in the fall semester. Most colleges conducted their programs during the daytime. There were, however, evening offerings available at one or two colleges.

Earlier reports on this pilot phase of the program (see Ricketts, 1986) suggested that summer learning was an effective option for students with remedial needs. It was reported, for example, that 88% of the students enrolled completed the program and approximately 68% had progressed signifi-

cantly in one or more basic skill. The pilot phase was judged a success. Support for the program grew throughout the University and Summer 1986 the program was expanded to include both senior and community colleges.

Students were eligible for the program if they scored below the University standards on one or more of the Freshman Skills Assessment Tests (FSAT's), or if they were judged as needing remediation by their college. The expansion of the program in the second year to sixteen CUNY colleges resulted in a 260% increase in enrollment, from 543 in 1985 to 1,414 in 1986. (Projected funding increases for 1987 are expected to boost prefreshman enrollments further.) Community colleges enrolled 448 students in 1986, and senior colleges enrolled 966. Program enrollments for each college are presented in Table 1.

Table 1: 1986 Program Enrollments by College

COLLEGE	N	COLLEGE	N
Baruch	135	LaGuardia	115
BMCC	70	Lehman	59
Brooklyn	127	Medgar Evers	39
Bronx	105	NYCTC	104
City	135	Queens	54
Hunter	119	Queensborough	56
John Jay	97	Staten Island	104
Kingsborough	63	York	32

EVALUATION DESIGN

The general purpose of the evaluation is to assess the Prefreshman Summer Program's effectiveness in preparing students for success in college. The various factors involved in the design of this evaluation are presented in this section, along with a brief description of the data collection methods and achievement indices used to assess program outcomes.

Issues

Questions or issues are the focus of any rigorous evaluation. They define the study's boundaries. The design of this preliminary evaluation attempted to address the issues of student characteristics, remedial needs, and rates of achievement. Answers were therefore sought to the following questions:

1. What are the demographic and academic characteristics of the students participating in the program?

2. What is the nature and extent of students' progress in basic skills proficiency?

3. How has the program facilitated students' adjustment to college?

4. What is the nature of post-program performance and retention rates for participants?

Methodology

The issues outlined above were addressed empirically, using three modes of data collection. The first was information gathered in pre- and post-program questionnaires which included student demographic data, pre- and posttest scores, enrollments by basic skill, placement data, and other information such as student attitudes and study strategies. The second mode of information gathering required program managers to prepare brief self-studies of their programs. These reports highlighted the instructional techniques and programming methods used. The third mode required the collaboration of the Office of Academic Affairs and the Office of Institutional Research to create and maintain a cohort of regularly admitted freshmen (both program participants and nonparticipants) for longitudinal analyses of post-program achievement and retention patterns. The longitudinal database contains elements relevant for analyses of academic progress and reenrollment patterns, while controlling for the effects of remedial need.

Conclusions about demographic and academic characteristics, and about academic progress, were largely drawn from a study of the questionnaire data. The self-study reports yielded findings on the non-instructional benefits of the program. Current data on the Summer 1985 cohort, a subset of the longitudinal database, allowed preliminary conclusions to be drawn about students' post-program performance and retention.

Achievement Measures

Accurate and reliable assessment of remedial progress is crucial to the validity of this study. To measure the effects of this program it is essential to understand the role of basic skills testing at CUNY. The University assesses the basic skills competencies of all incoming students by administering a battery of tests in reading, writing, and mathematics. These tests, known as the Freshman Skills Assessment Tests (FSAT's), help determine remedial

placement. Students taking part in the Prefreshman Program enrolled in one or more basic skills courses based on their test performance. The following standards were used to gauge student progress in achieving proficiency in basic skills:

1. students were considered to have progressed in a given basic skill if they had failed the pretest in that skill and passed the posttest upon completion of the program; or

2. if they were placed into a higher level of remediation as a result of attending the summer program.

Most students fell into one of these categories. There were some students, however, who passed the University standard in a given basic skill on entry into the program, but failed a higher college standard. Using the same achievement criteria, these students were considered to have progressed if they passed the college's standard or if they qualified for a higher level of remediation upon completion of the program.

FINDINGS

This section presents the results of the evaluation. Again, the authors stress the preliminary nature of these findings and remind the reader of the ongoing analyses of post-program performance and retention data. Findings are presented here on the characteristics, remedial needs, and academic progress by skill area of the group participating in the program in 1986. Also included are conclusions about the program's impact on their adjustment to college. Finally assessed are the long-term effects of the program in terms of first-year credit accumulation and retention.

The Students

The programs at the two types of colleges, community and senior, served somewhat different student populations. The community college prefreshmen were more likely to be female (66%, as opposed to 59% at the senior colleges), older (average age was 22, whereas for the senior college prefreshmen it was 20), and holders of GED certificates (20% vs. 7%). Moreover, the community college students were also somewhat less well prepared academically, as measured by their high school averages (78 vs. 82) and remedial need (see Table 3, p. 6). They tended, too, to have lower family incomes: 57% of community college students reported incomes below $16,000 per year, whereas only 43% of senior college prefreshmen reported family incomes in that range. Community college students indicated more often than senior college students that they were single parents. Overall, 12% of the students (16% at the senior colleges and 4% at the community colleges) reported that English was their second language. The demographic characteristics of the students, broken down by senior and community college, are presented in Table 2.

Table 2: Demographic Profile of 1986 Participants

	COMMUNITY COLLEGES (TOTAL: 448 STUDENTS)		SENIOR COLLEGES (TOTAL: 966 STUDENTS)	
SEX				
Female	66%	(283)	59%	(525)
Male	34%	(143)	41%	(367)
NATIVE LANGUAGE				
English	96%	(429)	84%	(812)
ESL	4%	(19)	16%	(154)
ETHNICITY				
Black	49%	(205)	37%	(328)
White	19%	(79)	25%	(220)
Hispanic	26%	(108)	20%	(178)
Asian	4%	(18)	16%	(137)
Other	2%	(9)	2%	(13)
AGE				
Mean	22 years		20 years	
Range	16-58		15-59	
DIPLOMA				
High School Diploma	80%	(335)	93%	(819)
GED Certificate	20%	(85)	7%	(63)
HIGH SCHOOL AVERAGE				
Mean	78.0		82.0	
Range	55.0-99.9		54.8-95.0	
WORK DURING SUMMER				
Yes	58%	(237)	63%	(540)
No	42%	(175)	37%	(324)
FAMILY INCOME				
Less than $4,000	13%	(36)	6%	(46)
$4,000 to $7,999	13%	(36)	11%	(76)
$8,000 to $11,999	12%	(34)	11%	(79)
$12,000 to $15,999	19%	(52)	15%	(106)
$16,000 to $19,999	11%	(31)	15%	(106)
$20,000 to $23,999	12%	(33)	13%	(96)
$24,000 to $27,999	10%	(29)	9%	(63)
$28,000 or more	10%	(28)	20%	(143)

Remedial Need

The 1,414 students enrolled in the program occupied a total of 2,033 instructional seats. The number and the percentage of students enrolled in each basic skill are listed in Table 3.

Table 3: Enrollment by Basic Skill

	Reading		Writing		Mathematics	
	%	(n)	%	(n)	%	(n)
Community Colleges	52%	(233)	57%	(253)	42%	(188)
Senior Colleges	32%	(310)	73%	(708)	35%	(341)
ALL COLLEGES	38%	(543)	68%	(961)	37%	(529)

As the data in Table 3 indicate, enrollments differed not only between types of colleges but also by basic skill. Thus, if remedial need is at all reflected in enrollment patterns, it appears that prefreshmen at the community colleges were more in need of remediation in the basic skills of reading and mathematics than prefreshmen at the senior colleges. These enrollment patterns, however, may not reflect remedial need as much as they do the courses made available to prefreshmen at the different colleges. One or two senior colleges, for example, chose to concentrate their resources in the area of writing, and this may account for the differences found in the enrollment patterns.

Student Achievement

A positive indicator of general student achievement is the program completion rate. In 1986, the rates were impressive: 94% of community college students and 90% of senior college students completed the summer program. When assessing academic progress, however, it should be noted that the colleges differ both in their remedial sequences and the criteria for placement within the sequence. Thus, the following issues were considered throughout the course of this evaluation and particularly when interpreting achievement data:

- The University, as mentioned earlier, has established minimum standards of competency on the FSAT's. Some colleges, however, have higher proficiency requirements and admitted students who satisfied the University standard but did not meet the college's higher standard of proficiency.

- Colleges differed in their criteria for selecting students for the program. Some enrolled students with pre-FSAT scores quite close to the proficiency standards, while others targeted their instruction to students with greater remedial need.

- In most cases teacher judgment was the final determinant of course placement, based on one or a combination of these factors: (a) a significant gain upon posttesting; (b) exceeding the minimum passing score upon posttesting; (c) classwork; or (d) major field of study.

Since the criteria for selection and advancement differ for each college, comparisons of student achievement between colleges would be imprudent and could lead to spurious conclusions. For these reasons comparative analyses of student achievement were not performed.

Reading

A total of 509 students (87 ESL and 422 non-ESL) completed instruction in reading. However, preliminary analysis suggests an important difference between ESL and non-ESL students participating in the program. Non-ESL students taking reading and writing, for example, tended more often to demonstrate progress by passing the posttests, while ESL students tended to progress by advancing to a higher level of remediation. For purposes of analysis, then, achievement is reported separately for ESL and non-ESL students. An overview of the reading achievement data for non-ESL students is presented first, in Table 4.

Table 4: Reading Achievement for Non-ESL Students

	Completed	Failed Pretest	Passed Post-test	F. Post- or P. Pretest	Advanced Course	Total Progress
Community	217	184	61	156	46	107 (49%)
Senior	205	164	96	109	47	143 (70%)
Total	422	348	157	265	93	250 (59%)

- 205 non-ESL students completed the program at the senior colleges. Of these, 143, or 70%, made progress either by passing the posttest or by advancing to a higher level course on completion. These results exceed those reported for the 1985 Prefreshman Program, when 57% of non-ESL senior college students either passed the posttest or advanced to a higher level course.

- 217 non-ESL students completed the program at the community colleges. Of these, 107, or 49%, made progress either by passing the posttest or by advancing to a higher level course on completion.

- Of those demonstrating achievement in reading, a greater proportion did so by passing the FSAT posttest than by advancing to a higher level

remedial course at both community and senior colleges. Most of these students satisfied their remedial requirement in reading and went on to enroll in credit-bearing courses earlier.

The reading performance of ESL students is presented in Table 5.

Table 5: Reading Achievement for ESL Students

	Completed	Failed Pretest	Passed Post-test	F. Post- or P. Pretest	Advanced Course	Total Progress
Community	3	3	0	3	0	0 (0%)
Senior	84	84	12	72	29	41 (48%)
Total	87	87	12	75	29	41 (46%)

- At the senior colleges, 84 ESL students completed reading. Of these, 41, or 48%, progressed by advancing to a higher level remedial course than by passing the FSAT posttest.
- At the community colleges, only 3 ESL students completed reading instruction. Unfortunately, because there were so few ESL students enrolled in reading, these three were placed in classes with non-ESL students. None made progress in reading.

Writing

A total of 881 students (155 ESL and 726 non-ESL) completed instruction in writing. Again, the data are presented separately for ESL and non-ESL students. An overview of the performance of non-ESL students is presented in Table 6.

Table 6: Writing Achievement for Non-ESL Students

	Completed	Failed Pretest	Passed Post-test	F. Post- or P. Pretest	Advanced Course	Total Progress
Community	212	208	101	111	31	132 (62%)
Senior	514	512	251	263	47	308 (60%)
Total	726	720	352	374	88	440 (61%)

- 514 non-ESL senior college students completed the program. Of these, 308, or 60%, made progress either by passing the posttest or by advancing to a higher level course. These results are comparable to those found in the Summer 1985 program, when 64% of the non-ESL students progressed in writing.

- 212 non-ESL students completed the program at the community colleges. Of these, 132, or 62%, made progress either by passing the posttest or by advancing to a higher level course on completion.

- As in reading, a greater percentage of students progressed in writing by passing the FSAT posttest than by advancing to a higher level of remedial course. These students, too, satisfied their remedial requirement in writing and can move more quickly into credit-bearing courses as freshmen.

The writing performance of ESL students is summarized in Table 7.

Table 7: Writing Achievement for ESL Students

	Completed	Failed Pretest	Passed Post-test	F. Post- or P. Pretest	Advanced Course	Total Progress
Community	17	17	0	17	13	13 (77%)
Senior	138	138	32	106	49	81 (59%)
Total	155	155	32	123	62	94 (61%)

- 138 ESL senior college students completed the program. Eighty-one students, or 59%, progressed; more progressed by advancing to a higher level remedial course than by passing the posttest.

- 17 ESL community college students completed the program. Of these, 13 students, or 77%, made progress, all by advancing to a higher level remedial course.

Mathematics

Achievement data are presented for the entire cohort of students completing mathematics instruction (N=482). An overview of mathematics performance is presented in Table 8.

A total of 482 students completed the program in mathematics. Results are summarized below.

Table 8: Mathematics Achievement

	Completed	Failed Pretest	Passed Post-test	F. Post- or P. Pretest	Advanced Course	Total Progress
Community	176	155	42	134	61	103 (59%)
Senior	306	279	184	122	52	236 (77%)
Total	482	434	226	256	113	339 (70%)

- 306 senior college students completed the program. Of these, 236, or 77%, progressed. These results are comparable to those reported for the Summer 1985 program, in which 83% of senior college students progressed in mathematics. Moreover, the majority of senior college prefreshmen progressed by passing the posttest, thus completing their remedial requirement in mathematics.

- 176 community college students completed the program. Of these, 103, or 59%, progressed, either by passing the posttest or by advancing to a higher level course. However, more community college prefreshmen advanced to a higher level remedial course than passed the FSAT posttest. This was due, in part, to the fact that many took courses which addressed the arithmetic but not the algebra portion of the FSAT in mathematics.

In sum, the skill area showing the greatest amount of success, as measured by the percentage of students who progressed, was mathematics: 70% of those completing mathematics progressed markedly. This was followed by writing (61% progressed) and reading (57% progressed). The greatest disparity between community and senior college students performance was in the area of mathematics. Senior college students, for example, tended to pass the FSAT posttest, while community college students, many of whom were taking only arithmetic, tended to advance to a higher level remedial course. Community college students also did less well in reading than senior college prefreshmen. These performance differences are not altogether surprising. Data presented earlier (see Table 3, p. 6) indicated that, in general, prefreshmen at the community colleges have more pronounced remedial needs. Thus, it would be unrealistic to expect them to demonstrate achievement rates comparable to the somewhat more proficient prefreshmen attending the senior college programs.

Transition to College

Information drawn from reports prepared by program managers indicated that a major benefit of the program is that it helps students adjust to college. They wrote that the program oriented students to college and provided invaluable advice on where to go for help with various problems and in meeting the requirements of college work. As we have already shown, many students completed remediation prior to their freshman year and, consequently, entered the mainstream of college life sooner. It was also reported that many students were more comfortable when starting their freshman year and that this had the potential for increasing retention.

Other benefits were mentioned as well. The small classes and large amounts of individual attention not only made instruction easier and more efficient for faculty, it also made students more comfortable about participating in class. This was especially true for ESL students and students entering with poorer skills. Moreover, the peer tutors were often seen as friends and role models, particularly when they were former basic skills students. And many students acquired word-processing or other computer skills which may be useful to them as they further their studies. Upon completing the program, according to reports, many students expressed a sense of accomplishment and confidence in their ability to handle college work.

Credit Accumulation

While it is too soon to measure the impact of the 1986 Prefresham Program on key academic outcomes such as credit accumulation and retention, inferences may be effectively drawn from the experiences of the 543 students who participated in the pilot phase of the program conducted at the senior colleges in Summer 1985. Post-program analyses contrasted 1985 program participants with other regularly admitted freshmen after two semesters of college on measures of credits earned, total credits and hours successfully completed, and remedial hours successfully completed. The method of analysis controlled for level of remedial need in order to isolate, as much as possible, the influence of the program independent of the confounding effects of academic preparation. We note that these results are preliminary and that firm conclusions require more complete analyses. Nonetheless, the initial results are encouraging: students participating in the program are earning credits at an accelerated rate and have higher retention rates than nonparticipants. For example, among students in the greatest remedial need (those failing all three FSAT's), those in the program earned an average of 11.5 credits in their freshmen year compared with 7.3 credits in the contrast group (see Table 9 below).

Similarly, the program participants successfully completed a greater total courseload (that is, credits plus remedial hours): 13.9 vs. 9.3. Regardless of remedial need, program participants earned between four and five more credits during their first year than their counterparts in the freshman population. The differences in mean credits and total coursework are all statistically significant. It should be noted, however, that the program students did not earn fewer remedial hours, indicating that the program does not eliminate completely the need for subsequent remedial work.

Table 9: First Year Credit Accumulation by FSAT (Means)

	PASSING NO FSATs	
	1985 Participants (n = 55)	Nonparticipants (n = 1,462)
Credits Earned*	11.5	7.3
Remedial Hours	2.5	2.0
Total Credits and Hours*	13.9	9.3
PASSING ONE FSAT		
	1985 Participants (n = 134)	Nonparticipants (n = 2,047)
Credits Earned*	15.6	11.9
Remedial Hours	2.1	2.1
Total Credits and Hours*	13.9	9.3
PASSING TWO FSATs		
	1985 Participants (n = 209)	Nonparticipants (n - 2,930)
Credits Earned*	19.8	16.9
Remedial Hours	1.3	1.5
Total Credits and Hours*	21.2	18.4

* Statistically significant at .01 level

In sum, students participating in the program completed more courses and earned more credits than the contrast group of regularly admitted first-time freshmen. Remediation during the first year was strongly influenced by FSAT performance for both groups, and the program did not eleminate entirely the need for further remediation. Although relevant data are still being gathered, we suspect that remedial need during the second year is substantially reduced for these students.

Retention

In every category of remedial need, students enrolled in the 1985 program had higher retention rates for Fall 1986 than the contrast group (see Table 10).

For students passing no FSAT's initially, for example, the comparable retention rates are 67% for participants and 60% for nonparticipants. The differences in retention rates for those with less remedial need at initial testing are even more dramatic, 85% vs. 70% for those failing one FSAT upon entrance to the University. Again, these results tend to confirm the notion that swift and efficient remedial instruction facilitates the transition to college, which, in turn, has long-term effects on retention and student success.

Table 10: Fall 1986 Retention Rates by FSAT

	NO FSATs PASSED	ONE FSAT PASSED	TWO FSATs PASSED
Participants	67.3%	75.4%	84.7%
Nonparticipants	60.2%	65.1%	70.5%

CONCLUSION

The evidence gathered and analyzed during the course of this evaluation provides further confirmation of findings from earlier reports (Bengis, 1985; Heyns, 1978; Lauridsen and Meyers, 1982; Ricketts, 1986) that prefreshman basic skills instruction delivered over the summer is effective. Information from all sources - - that is, prior research, longitudinal analyses, the students and faculty - - converge on the conclusion that this form of remediation has substantial positive effects on academic achievement and student success.

Clearly, the Prefreshman Summer Program was successful in improving achievement in all three basic skill areas for both regular and ESL students. Moreover, a substantial number of prefreshmen satisfied their remedial requirements prior to beginning their freshman year. As Ricketts (1986) noted, beneficial effects were observed not only in terms of academic achievement, but in other facets of college life as well. The students' increasing confidence in their ability, along with their greater familiarity with the college and their development of a network or advisors and mentors, were also cited as positive outcomes. As a result of the program, students are expected to enter the mainstream of college work sooner, thereby increasing the likelihood of long-term academic success.

Lastly, there remains a wealth of information still to be explored in the data gathered to date. Subsequent analyses, it is hoped, will shed light on ways to improve summer learning and further develop student success strategies. The insights gleaned from our preliminary analyses, however, are detailed in the series of recommendations presented below.

Recommendations

1. Analyses of student achievement suggest the need for developing ESL instructional components. ESL students, in general, enter college with poorer English language skills than native speakers and require more time and individual attention to improve their basic skills. Instruction designed specifically to address the needs of ESL students may help them enter the mainstream of college work more quickly.

2. Mathematics instruction was apparently particularly effective when delivered over the summer. The hierarchical, componential nature of mathematics makes it amenable to modular instructional methods. Further research is needed to explore ways of delivering reading and writing instuction more effectively over the summer.

3. Summer remedial programs represent an opportunity for exploring new and innovative instructional methods and tactics. Program designers must capitalize on this opportunity to introduce instructional innovation.

4. Instruction in computer skills and study strategies should augment basic skills instruction whenever possible. These skills have been shown to be effective for helping students manage the intellectual and cognitive demands of college work. Many students expressed an interest in acquiring these skills.

5. Student demographics suggest the need for increased attention to the support services available over the summer. The large numbers of students who are single parents or in need of employment points to the need to make support services, like child care and employment referrals, more widely available to prefreshmen.

6. The need for flexible scheduling was underscored by the large number of students who must work while attending summer school. Basic skills instruction scheduled for evenings and weekends may attract more students to the Prefreshman Program.

In conclusion, although it is difficult to draw causal inferences from the available data, we are confident that this program capitalizes on the motivations and aspirations of students entering the University. The results of our analysis indicate quite clearly that the Prefreshman Summer Basic Skills Program, at minimum, increases the opportunity for those motives and aspirations to blossom.

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